

AMENDMENTS TO THE CLAIMS

CLAIM 1 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:

- a housing adapted to be mounted to the bicycle;
- a regulator supported by the housing to receive signals from a power supply; and
- an output disposed on the housing to supply regulated signals provided by the regulator to a plurality of electrical bicycle components external to the housing;

wherein the output includes:

- a first external terminal to provide non-ground electrical signals to a first electrical bicycle component; and
- a separate second external terminal to provide separate non-ground electrical signals to a second electrical bicycle component.

CLAIM 2 (CURRENTLY AMENDED): The apparatus according to claim 1 wherein the output comprises a plurality of power communication paths, wherein a first power communication path connected to the first external terminal provides a physically different power characteristic from the regulator than a second power communication path connected to the second external terminal.

CLAIM 3 (ORIGINAL): The apparatus according to claim 1 further comprising an input disposed on the housing to receive power from an external power supply and to supply the power from the external power supply to the regulator.

CLAIM 4 (ORIGINAL): The apparatus according to claim 3 wherein the input is adapted to receive power from an alternating current generator.

CLAIM 5 (ORIGINAL): The apparatus according to claim 4 further comprising a power storage element supported by the housing for storing power from the alternating current generator.

CLAIM 6 (PREVIOUSLY PRESENTED): The apparatus according to claim 4 wherein the plurality of electrical bicycle components comprise a radio, a cell phone charger and a light.

CLAIM 7 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 wherein at least one of the first external terminal or the second external terminal is structured to be detachably connected to its corresponding first or second electrical bicycle component.

CLAIM 8 (CURRENTLY AMENDED): The apparatus according to claim 7 further comprising a mounting member disposed on the housing to detachably mount at least one of the first or second electrical bicycle components externally to the housing so that the at least one of the first or second electrical bicycle components is carried by the housing and electrical signals are provided from the at least one of the first external terminal or the second external terminal to the at least one of the first or second electrical bicycle components.

CLAIM 9 (PREVIOUSLY PRESENTED): The apparatus according to claim 8 wherein the at least one of the first external terminal or the second external terminal comprises a contact terminal structured to contact a complementary contact terminal on its corresponding first or second electrical bicycle component when the corresponding first or second electrical bicycle component is mounted to the housing.

CLAIM 10 (PREVIOUSLY PRESENTED): The apparatus according to claim 8 wherein a surface of the mounting member comprises one of a convex portion or a concave portion structured to engage a corresponding one of a concave portion or a convex portion on at least one of the first or second electrical bicycle components so that the at least one of the first or second electrical bicycle components cannot be detached in a direction substantially perpendicular to the surface of the mounting member from which the one of the convex portion or the concave portion extends.

CLAIM 11 (PREVIOUSLY PRESENTED): The apparatus according to claim 8 wherein each of the first external terminal and the second external terminal is structured to be detachably connected to its corresponding first or second electrical bicycle component.

CLAIM 12 (CURRENTLY AMENDED): The apparatus according to claim 11 wherein the first external terminal and the second external terminal provide different physical power characteristics from the regulator relative to each other.

CLAIM 13 (PREVIOUSLY PRESENTED): The apparatus according to claim 7 further comprising first and second mounting members disposed on the housing, each mounting member being structured to detachably mount a corresponding one of the first or second electrical bicycle components to the housing.

CLAIM 14 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:

a housing adapted to be mounted to the bicycle;

a regulator supported by the housing to receive signals from a power supply; and

an output disposed on the housing to supply regulated signals provided by the regulator to a plurality of electrical bicycle components external to the housing;

wherein the output includes:

a first external terminal to provide electrical signals to a first electrical bicycle component; and

a separate second external terminal to provide separate electrical signals to a second electrical bicycle component;

wherein at least one of the first external terminal or the second external terminal is structured to be detachably connected to its corresponding first or second electrical bicycle component;

first and second mounting members disposed on the housing, each mounting member being structured to detachably mount a corresponding one of the first or second electrical bicycle components to the housing;

~~The apparatus according to claim 13~~ wherein the first and second external terminals comprise respective first and second contact terminals, wherein the first contact terminal is provided in close proximity to the first mounting member and is structured to contact a first complementary contact terminal on the first electrical bicycle component when the first electrical bicycle component is mounted to the first mounting member, and wherein the second contact terminal is provided in close proximity to the second mounting member and is structured to contact a second complementary contact terminal on the second electrical bicycle component when the second electrical bicycle component is mounted to the second mounting member.

CLAIM 15 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:
a housing adapted to be mounted to the bicycle;
a regulator supported by the housing to receive signals from a power supply; and
an output disposed on the housing to supply regulated signals provided by the regulator to a plurality of electrical bicycle components external to the housing;
wherein the output includes:
a first external terminal to provide electrical signals to a first electrical bicycle component; and
a separate second external terminal to provide separate electrical signals to a second electrical bicycle component;
wherein at least one of the first external terminal or the second external terminal is structured to be detachably connected to its corresponding first or second electrical bicycle component;
first and second mounting members disposed on the housing, each mounting member being structured to detachably mount a corresponding one of the first or second electrical bicycle components to the housing;

~~The apparatus according to claim 13~~ wherein the first and second external terminals comprise respective first and second connector terminals, wherein the first connector terminal is provided in close proximity to the first mounting member and is structured to engage a first complementary connector terminal on the first electrical bicycle component when the first bicycle component is mounted to the first mounting member, and wherein the second connector terminal is provided in close proximity to the second mounting member and is structured to engage a second complementary connector terminal on the second electrical bicycle component when the second electrical bicycle component is mounted to the second mounting member.

CLAIM 16 (PREVIOUSLY PRESENTED): The apparatus according to claim 15 wherein the first connector terminal comprises one of a male or a female connector terminal, and wherein the first complementary connector terminal comprises the other one of the male or the female connector terminal.

CLAIM 17 (PREVIOUSLY PRESENTED): The apparatus according to claim 13 wherein each of the plurality of mounting members comprises one of a convex portion or a concave portion structured to engage a corresponding one of a concave portion or a convex portion on at least one of the first or second electrical bicycle components so that the at least one of the first or second electrical bicycle components cannot be detached in a direction substantially perpendicular to the surface of the mounting member from which the one of the convex portion or the concave portion extends.

CLAIM 18 (CURRENTLY AMENDED): The apparatus according to claim 13 wherein the first external terminal and the second external terminal provide different physical power characteristics from the regulator relative to each other.

CLAIM 19 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 wherein signals communicated from the regulator to the first external terminal are adapted to be communicated to a display.

CLAIM 20 (PREVIOUSLY PRESENTED): The apparatus according to claim 19 wherein the first external terminal is structured to communicate a data signal to the display.

CLAIM 21 (ORIGINAL): The apparatus according to claim 20 further comprising a signal input disposed on the housing and structured to receive a signal from outside of the housing.

CLAIM 22 (PREVIOUSLY PRESENTED): The apparatus according to claim 21 further comprising a waveform shaping circuit supported by the housing, wherein the waveform shaping circuit receives the signal from the signal input and provides a shaped signal as the data signal to the first external terminal.

CLAIM 23 (ORIGINAL): The apparatus according to claim 22 wherein the signal input is structured to receive a signal from an alternating current generator.

CLAIM 24 (PREVIOUSLY PRESENTED): The apparatus according to claim 23 wherein the regulator receives the signal from the alternating current generator and uses the signal from the alternating current generator to provide power to the first external terminal to power the display.

CLAIM 25 (ORIGINAL): The apparatus according to claim 24 further comprising a power storage element supported by the housing for storing power from the alternating current generator.

CLAIM 26 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:

a housing adapted to be mounted to the bicycle;

a voltage regulator supported by the housing to receive power from a power supply and to provide first and second different non-ground voltages, each of which is adapted to power respective first and second electrical bicycle components; and

first and second external output terminals disposed on the housing to supply the respective first and second different non-ground voltages from the regulator to the respective first and second electrical bicycle components external to the housing.

CLAIM 27 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:

a housing adapted to be mounted to the bicycle;

a regulator supported by the housing to receive signals from a signal source;

a plurality of mounting members disposed on the housing to directly attach a corresponding plurality of electrical bicycle components to the housing; and

an external output terminal disposed on the housing in close proximity to each mounting member to supply regulated non-ground signals provided by the regulator to corresponding ones of the plurality of electrical bicycle components mounted to the plurality of mounting members.

CLAIM 28 (CURRENTLY AMENDED): An apparatus for providing electrical signals to bicycle components, wherein the apparatus comprises:

a housing adapted to be mounted to the bicycle;

a regulator supported by the housing to receive signals from a signal source;

a mounting member adapted to directly mount each one of a plurality of electrical bicycle components to that mounting member, each electrical bicycle component having different non-ground signal requirements; and

an external output terminal disposed on the housing to supply regulated non-ground signals provided by the regulator to each of the plurality of electrical bicycle components when individually mounted to the mounting member.

CLAIM 29 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 wherein each first and second external terminal provides a detachable connection to its respective first and second electrical bicycle component.

CLAIM 30 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 wherein the regulator includes a waveform shaping circuit structured to convert an electrical signal from an alternating current generator into a pulsed signal.

CLAIM 31 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 further comprising an auto-light circuit supported by the housing to provide signals through the first external terminal to automatically turn a light on and off.

CLAIM 32 (PREVIOUSLY PRESENTED): The apparatus according to claim 1 wherein the regulator is disposed within the housing.

CLAIM 33 (CURRENTLY AMENDED): The apparatus according to claim 1 wherein the non-ground electrical signals provided from the regulator by the first external terminal are different from the non-ground electrical signals provided from the regulator by the second external terminal.

CLAIM 34 (CURRENTLY AMENDED): The apparatus according to claim 1 wherein the non-ground electrical signals provided by the first external terminal and the second external terminal have a voltage in a range of from approximately 1.2 volts to approximately 3.7 volts.

CLAIM 35 (CURRENTLY AMENDED): The apparatus according to claim 1 wherein the output includes a third external terminal to provide separate non-ground electrical signals to a third electrical bicycle component, wherein the first, second and third external terminals are disposed in a row.

CLAIM 36 (CURRENTLY AMENDED): The apparatus according to claim 8 wherein the mounting member projects from a surface of the housing and is structured to detachably connect at least one of the first or second electrical bicycle components externally to the housing such that the at least one of the first or second electrical bicycle components cannot be detached in a direction substantially perpendicular to the surface of the housing.

CLAIM 37 (PREVIOUSLY PRESENTED): The apparatus according to claim 36 wherein the mounting member has a wall that forms an abutment that faces in a direction toward the surface of the housing.

CLAIM 38 (PREVIOUSLY PRESENTED): The apparatus according to claim 37 wherein the mounting member has a dovetail shape.

CLAIM 39 (PREVIOUSLY PRESENTED): The apparatus according to claim 36 wherein the first external terminal is disposed on the housing at a first side of the mounting member, and wherein the second external terminal is disposed on the housing at an opposite second side of the mounting member.

CLAIM 40 (PREVIOUSLY PRESENTED): The apparatus according to claim 39 wherein the first external terminal is disposed on the housing at a first side of the mounting member, and wherein the second external electrical terminal is disposed on the housing at the first side of the mounting member.

CLAIM 41 (CURRENTLY AMENDED): The apparatus according to claim 13 wherein each of the first mounting member and the second mounting member projects from a surface of the housing and is structured to detachably connect at least one of first or second electrical bicycle components externally to the housing such that the at least one of the first or second electrical bicycle components cannot be detached in a direction substantially perpendicular to the surface of the housing.

CLAIM 42 (PREVIOUSLY PRESENTED): The apparatus according to claim 41 wherein each of the first mounting member and the second mounting member has a wall that forms an abutment that faces in a direction toward the surface of the housing.

CLAIM 43 (PREVIOUSLY PRESENTED): The apparatus according to claim 42 wherein at least one of the first mounting member and the second mounting member has a dovetail shape.

CLAIM 44 (PREVIOUSLY PRESENTED): The apparatus according to claim 41 wherein the first external terminal is disposed on the housing at a first side of the first mounting member, wherein the second external terminal is disposed on the housing at a first side of the second mounting member, and wherein the output further includes:

a third external terminal disposed on an opposite second side of the first mounting member to provide electrical signals to the first electrical bicycle component; and

a fourth external terminal disposed on an opposite second side of the second mounting member to provide electrical signals to the second electrical bicycle component.